REMARKS

Claims 1-20 are pending. By this amendment, claims 1, 8, and 15 are amended. The amendments are supported in the original specification at least at page 6, lines 17 – 26. No new matter is introduced. Reconsideration and issuance of a Notice of Allowance are respectfully requested.

On page 2 the Office Action rejects claims 1-20 under 35 U.S.C. §112, paragraph 2. This rejection is respectfully traversed.

The Examiner asserts that the term "associating" as used in claims 1, 8, and 15 renders the claims indefinite because "it is unclear what method/process applicant is intending to encompass." The term associating means "adding to" or "grouping with." See the specification at page 3, lines 17-18 and page 5, lines 6-8, for example. Furthermore, one of ordinary skill in the art will recognize that the term "associating" must mean "adding to" or "grouping with" based on the last element rendered in claims 1, 8, and 15: For example, claim 1 recites "selecting second-generation solutions...for the first population from the offspring solutions and the parent solutions. Clearly, the offspring and parent solutions must be grouped in some fashion for this last step to be completed. In view of the above, Applicant respectfully contends that claims 1-20 satisfy all the requirements of 35 U.S.C. §112, second paragraph, and requests withdrawal of the rejections of these claims.

On page 3, the Office Action rejects claims 1 – 20 under 35 U.S.C. § 101 because claims 1, 8, and 15 "are directed to non-statutory subject matter. This rejection is respectfully traversed.

Claims 1-8 and 15 are amended to recite selecting a solution to optimize layout of an integrated circuit on a general purpose computer. This amendment is supported in the specification at least at page 6, lines 17 – 26. Claims 1, 8, and 15 should now be allowable. Withdrawal of the rejection of claims 1-20 under 35 U.S.C. §101 is respectfully requested.

On page 5 the Office Action rejects claims 1 – 20 under 35 U.S.C. § 102(b) over "Genetically Breeding Populations of Computer Programs to Solve Problems in Artificial Intelligence" (hereafter Koza). This rejection is respectfully traversed.

In a section entitled "Background on Genetic Programming," Koza describes the basic purpose, structure, and operation of genetic algorithms. Koza provides a "model genetic algorithm." Koza describes a genetic algorithm as a mechanism for solving optimization problems by combining individuals in a population to produce offspring, evaluating the offspring, and eliminating from the population, those individuals that have a low fitness value. However, nowhere does Koza disclose or suggest convergence using two populations.

More specifically, Koza does not disclose or suggest combining an individual from one population with an individual from a second population.

The Background section of the present application describes a genetic algorithm that operates on a single population of solutions. As noted in the Background section, such an application of a genetic algorithm has the disadvantage of producing offspring with little diversity. This use of a genetic algorithm is exactly what Koza discloses. In other words, the Background section of the present application discloses Koza's use of genetic algorithms and notes the limitations inherent in such an application.

In contrast to Koza, each of the independent claims 1, 8, and 15 recites combining at least one parent solution from a first population with at least one parent solution from a second population to create offspring solutions. Thus, the inventions recited in independent claims 1, 8, and 15 are fundamentally different from those disclosed in Koza in that the inventions require first and second populations from which offspring are created whereas Koza creates offspring from a single population. Using two (or more) populations provides unique advantages over Koza's approach in that a more diverse population of solutions is generated. Because Koza does not disclose or suggest all the features of independent claims 1, 8, and 15, these claims are allowable. Claims 2 – 7 depend from allowable claim 1, claims 9 – 14 depend from allowable claim 8, and claims 16 – 20 depend from allowable claim 15, and for these reasons and the additional features they recite, claims 2 – 7, 9 – 14, and 16 – 20 are also allowable. Withdrawal of the rejection of claims 1 – 20 under 35 U.S.C. § 102(b) is respectfully requested.

In view of the above remarks, Applicant respectfully submits that the application is in condition for allowance. Prompt examination and allowance are respectfully requested.

 Should the Examiner believe that anything further is desired in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

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